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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/779,411

02/13/2004

Ganesh Sundaram

CISCP842

7770

54406

7590

12/08/2008

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EXAMINER

DUONG, THOMAS

ART UNIT

PAPER NUMBER

2445

MAIL DATE

DELIVERY MODE

12/08/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/779,411	<b>Applicant(s)</b> SUNDARAM ET AL.	
	<b>Examiner</b> Thomas Duong	<b>Art Unit</b> 2445	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 03 July 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Amendment***

1. This office action is in response to the Applicants' After Non-Final Amendment filed on July 3, 2008. *Claims 1-24* are presented for further consideration and examination.

### ***Double Patenting***

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be

Art Unit: 2445

commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims 1, 9, and 17 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over *claims 1 and 14* of U.S. Patent No.

US007020814B2. Although the conflicting claims are not identical, they are not patentably distinct from each other because they are both claim:

- *detecting a failure of a Fibre Channel link from the local Fibre Channel port to an associated local Fibre Channel transport interface;*
- *generating error condition codes; and transmitting the error condition codes over the SONET/SDH transport path overhead to a the remote Fibre Channel transport interface so that the Fibre Channel link from the remote Fibre Channel transport interface to the associated remote Fibre Channel port is disabled after a predetermined amount of time.*

#### **Claim Rejections - 35 USC § 103**

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2445

5. Claims 1-2, 4-6, 9, 11-14, 17, and 19-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith et al. (US 20030074449A1) and in view of Holness et al. (US 20040114924A1).

6. With regard to claims 1, 9, and 17, Smith discloses,

- *transmitting Ordered Sets indicative of non-operation from said first transport interface to said first Fibre Channel port so that said first Fibre Channel port performs link initialization and buffer credit recovery procedures with said second Fibre Channel port.* (Smith, para.1-239)

Smith discloses, “Fibre Channel uses 8B/10B line encoding to improve the transmission characteristics of the link. Within the 8B/10B line encoding scheme, certain basic signals, often termed “ordered sets” are defined which identify frame boundaries, transmit primitive function requests, and maintain proper link transmission characteristics during periods of inactivity. The term “ordered set” implies in this context a series of data/control characters which, when arranged in a particular order, represent a predefined meaning within the given protocol”

(Smith, para.123). Hence, Smith teaches of maintaining proper link transmission characteristics (i.e., Applicants’ performing link initialization) during periods of inactivity (i.e., Applicants’ indicative of non-operation) using the “ordered sets” (i.e., Applicants’ ordered sets) within the 8B/10B line encoding scheme. Smith discloses, “Advantageously, the invention uses the buffer credit link flow control mechanism of Fibre Channel, and ESCON, to ensure that no buffer overflow occurs when handing-off between the different client signal data rates and

Art Unit: 2445

*SONET/SDH payload rates*" (Smith, para.94). Hence, Smith teaches of utilizing the buffer credit link flow control mechanism of the Fibre Channel.

However, Smith does not explicitly disclose,

- *detecting an interruption in said SONET/SDH transport network responsive to a GFP loss of synchronization; and*

Holness teaches,

- *detecting an interruption in said SONET/SDH transport network responsive to a GFP loss of synchronization; and* (Holness, para.1-123)

Holness discloses, *"Upon detecting a network adaptation or mapping failure (e.g., the loss of GFP frame delineation), an ESS transmits an SRF signal upstream to the far-end ESS. The near-end ESS then periodically generates SRF signals destined to the far-end ESS. Upon receiving an SRF signal, the far-end ESS raises an alarm and performs procedures to shut down the customer link. When the network adaptation or mapping failure clears, the near-end ESS stops sending SRF signals to the far-end ESS. As a result, the near-end and far-end ESS re-establish their respective customer links"* (Holness, para.71). Hence, Holness teaches detecting (i.e., Applicants' detecting) a network adaptation or mapping failure (i.e., Applicants' interruption) in the transport networks based on synchronous optical network (SONET) or synchronous digital hierarchy (SDH) (i.e., Applicants' SONET/SDH transport network) through the loss of GFP frame delineation (i.e., Applicants' GFP loss of synchronization).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teachings of Holness with the teachings of Smith to provide *"a method for managing a service across an optical network over a*

Art Unit: 2445

*dedicated circuit between a first and second service termination points*" (Holness, para.7). Holness discloses, *"There is a need, therefore, for a system and method that enable service providers to monitor the performance of their services more effectively than current OAM techniques"* (Holness, para.6). In addition, according to Smith, *"A further object of the invention seeks to provide a method of load balancing synchronous traffic comprising client signals across a synchronous network"* (Smith, para.24).

7. With regard to claims 2, 4, 11-12, and 19-20, Smith and Holness disclose,

- *wherein said detecting step comprises polling GFP synchronization status.*

(Smith, para.1-239; Holness, para.1-123)

Holness discloses, *"The first category, service surveillance, has two components: alarm or status monitoring and performance monitoring. Alarm or status monitoring is a process of tracking failure events to build an understanding of the overall transmission performance of a network element. Performance monitoring is a process of continuous collection, analysis, and reporting of performance data associated with the transmitting network element"* (Holness, para.68).

8. With regard to claims 5, 13, and 21, Smith and Holness disclose,

- *wherein said Ordered Sets comprise Fibre Channel Not Operational Ordered Sets.* (Smith, para.1-239; Holness, para.1-123)

Smith discloses, *"Fibre Channel uses 8B/10B line encoding to improve the transmission characteristics of the link. Within the 8B/10B line encoding scheme, certain basic signals, often termed "ordered sets" are defined which identify*

Art Unit: 2445

*frame boundaries, transmit primitive function requests, and maintain proper link transmission characteristics during periods of inactivity. The term "ordered set" implies in this context a series of data/control characters which, when arranged in a particular order, represent a predefined meaning within the given protocol"* (Smith, para.123).

9. With regard to claims 6, 14, and 22, Smith and Holness disclose,

- *further comprising:*

- *determining that said SONET/SDH transport network has regained synchronization; and* (Smith, para.1-239; Holness, para.1-123)

Holness discloses, *"When the network adaptation or mapping failure clears, the near-end ESS stops sending SRF signals to the far-end ESS. As a result, the near-end and far-end ESS re-establish their respective customer links"* (Holness, para.71).

- *subsequently terminating transmission of said Ordered Set signals.* (Smith, para.1-239; Holness, para.1-123)

Holness discloses, *"When the network adaptation or mapping failure clears, the near-end ESS stops sending SRF signals to the far-end ESS. As a result, the near-end and far-end ESS re-establish their respective customer links"* (Holness, para.71).

10. Claims 3, 10, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith et al. (US 20030074449A1), in view of Holness et al. (US 20040114924A1), and further in view of Kamiya et al. (US007298694B2).



Art Unit: 2445

11. With regard to claims 3, 10, and 18, Smith and Holness disclose,

See *claims 2, 9, and 17* rejection as detailed above.

However, Smith and Holness do not explicitly disclose,

- *wherein said detecting step comprises receiving a multibit error indication in CHEC bits.*

Kamiya teaches,

- *wherein said detecting step comprises receiving a multibit error indication in CHEC bits.* (Kamiya, col.1, line 6 – col.26, line 36)

Kamiya discloses, “As shown in FIG. 3, the above-described core header includes two PLI (PDU Length Indicator) fields each having two bytes and two cHECs (core Header Error Control) fields. The PLI indicates the length (number of bytes) of the above-described payload area and the cHEC indicates the result of a CRC16 calculation carried out on the PLI field and is intended for protecting integrity of the information in the core header” (Kamiya, col.1, lines 52-59).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teachings of Kamiya with the teachings of Smith and Holness to provide “a method for managing a service across an optical network over a dedicated circuit between a first and second service termination points” (Holness, para.7). Holness discloses, “There is a need, therefore, for a system and method that enable service providers to monitor the performance of their services more effectively than current OAM techniques” (Holness, para.6). In addition, according to Smith, “A further object of the invention seeks to provide a method of load balancing synchronous traffic comprising client signals across a

Art Unit: 2445

*synchronous network” (Smith, para.24). In addition, according to Kamiya, “The present invention is intended to solve the above-described problems and it is an object of the present invention to provide a GFP frame transfer apparatus and GFP frame transfer method capable of providing performance monitoring of an end-to-end path using the FCS field of a GFP frame in a GFP frame transfer. It is an object of the present invention to provide a GFP frame transfer apparatus and GFP frame transfer method capable of providing performance monitoring of an end-to-end path using the FCS field of a GFP frame in a GFP frame transfer” (Kamiya, col.1, lines 46-59).*

12. Claims 7-8, 15-16, and 23-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith et al. (US 20030074449A1), in view of Holness et al. (US 20040114924A1), and further in view of Phelps et al. (US 20050058064A1).

13. With regard to claims 7, 15, and 23, Smith and Holness disclose,

See *claims 6, 14, and 22* rejection as detailed above.

However, Smith and Holness do not explicitly disclose,

- *further comprising: waiting a predetermined amount of time before terminating transmission of said Ordered Set signals.*

Phelps teaches,

- *further comprising: waiting a predetermined amount of time before terminating transmission of said Ordered Set signals. (Phelps, para.1-55)*

Art Unit: 2445

Phelps discloses, *"However, it is known in the art to wait a predefined "wait to restore" time before reverting to the working channel, to ensure that the working channel is fully operational"* (Phelps, para.37).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teachings of Phelps with the teachings of Smith and Holness to provide *"a method for managing a service across an optical network over a dedicated circuit between a first and second service termination points"* (Holness, para.7). Holness discloses, *"There is a need, therefore, for a system and method that enable service providers to monitor the performance of their services more effectively than current OAM techniques"* (Holness, para.6). In addition, according to Smith, *"A further object of the invention seeks to provide a method of load balancing synchronous traffic comprising client signals across a synchronous network"* (Smith, para.24). In addition, according to Phelps, *"Thus the extra traffic is equitably accommodated while an appropriate level of protection is provided for the protected traffic carried by the optical network"* (Phelps, para.19).

14. With regard to claims 8, 16, and 24, Smith, Holness, and Phelps disclose,
- *wherein said predetermined amount of time comprises 20 milliseconds.* (Smith, para.1-239; Holness, para.1-123; Phelps, para.1-55)

### **Response to Arguments**

15. Applicants' arguments with respect to *claim 1* have been considered but they are not persuasive.

Art Unit: 2445

16. With regard to claim 1, the Applicants point out that:

- *A cursory review of presently pending claim 1, for example, shows that the quoted language above is not found in applicants' presently pending claims. Pending claim 1 has the steps of: "detecting an interruption in said SONET/SDH transport network responsive to a GFP loss of synchronization;" and "transmitting Ordered Sets indicative of non-operation from said first transport interface to said first Fibre Channel port so that said first Fibre Channel port performs link initialization and buffer credit recovery procedures with said second Fibre Channel port." Thus an interruption is detected in the SONET/SDH transport network, not in the "link from the local Fibre Channel port to an associated local Fibre Channel transport interface." And, the Ordered sets indicative of the SONET/SDH network non-operation are transmitted to the Fibre Channel port from its corresponding transport interface, not from one Fibre Channel transport interface over the SONET/SDH transport path to the remote Fibre Channel transport interface. The claims of the '814 patent and the present claims are not related and are certainly not obvious in light of each other. The double patenting rejection should be withdrawn.*

However, the Examiner finds that the Applicants' arguments are not persuasive because the link between the first and second Fibre Channel ports are transported over a SONET/SDH network, according to the preamble of claim 1 of the current application. Hence, "a failure of a Fibre Channel link" would mean "an interruption in said SONET/SDH transport network".

17. With regard to claim 1, the Applicants point out that:

Art Unit: 2445

- *A cursory review of presently pending claim 1, for example, shows that the quoted language above is not found in applicants' presently pending claims. Pending claim 1 has the steps of: "detecting an interruption in said SONET/SDH transport network responsive to a GFP loss of synchronization;" and "transmitting Ordered Sets indicative of non-operation from said first transport interface to said first Fibre Channel port so that said first Fibre Channel port performs link initialization and buffer credit recovery procedures with said second Fibre Channel port." Thus an interruption is detected in the SONET/SDH transport network, not in the "link from the local Fibre Channel port to an associated local Fibre Channel transport interface." And, the Ordered sets indicative of the SONET/SDH network non-operation are transmitted to the Fibre Channel port from its corresponding transport interface, not from one Fibre Channel transport interface over the SONET/SDH transport path to the remote Fibre Channel transport interface. The claims of the '814 patent and the present claims are not related and are certainly not obvious in light of each other. The double patenting rejection should be withdrawn.*

However, the Examiner finds that the Applicants' arguments are not persuasive because transmission "to the Fibre Channel port from its corresponding transport interface" is the same as transmission "from one Fibre Channel transport interface ... to the remote Fibre Channel transport interface" since the current application and U.S. Patent No. 7020814 specify the utilization of the SONET/SDH as the transport network.

18. With regard to claim 1, the Applicants point out that:

Art Unit: 2445

- *The applicants find no teaching of "transmitting Ordered Sets... from said first transport face to said first Fibre Channel port...", as called for in claim 1 in cited paragraph 0123. Nor do paragraphs 0123 and 94 teach, "transmitting Ordered Sets indicative of non-operation...", so that said first Fibre Channel port performs link initialization and buffer credit recovery procedures with said second Fibre Channel port." As the Examiner notes, paragraph 94 describes the use of Fibre Channel buffer credit link flow control mechanism, not what the claim 1 recites. Furthermore, the Examiner appears to have confused "non-operation," with "inactivity." While "inactivity" might refer to the non-use of an operating link by clients, "non-operation" refers to an interruption of the SONET/SDH transport network between the first and second transport interfaces, as recited in claim 1. The two things are different.*

However, the Examiner finds that the Applicants' arguments are not persuasive because Smith discloses, "Fibre Channel uses 8B/10B line encoding to improve the transmission characteristics of the link. Within the 8B/10B line encoding scheme, certain basic signals, often termed "ordered sets" are defined which identify frame boundaries, transmit primitive function requests, and maintain proper link transmission characteristics during periods of inactivity. The term "ordered set" implies in this context a series of data/control characters which, when arranged in a particular order, represent a predefined meaning within the given protocol" (Smith, para.123). Hence, Smith teaches of maintaining proper link transmission characteristics (i.e., Applicants' performing link initialization) during periods of inactivity (i.e., Applicants' indicative of non-operation) using the "ordered sets" (i.e., Applicants' ordered sets) within the 8B/10B line encoding scheme. Smith discloses,

Art Unit: 2445

*“Advantageously, the invention uses the buffer credit link flow control mechanism of Fibre Channel, and ESCON, to ensure that no buffer overflow occurs when handing-off between the different client signal data rates and SONET/SDH payload rates”* (Smith, para.94). Hence, Smith teaches of utilizing the buffer credit link flow control mechanism of the Fibre Channel.

### **Conclusion**

19. **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).
- A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.
20. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas Duong whose telephone number is 571/272-3911. The examiner can normally be reached on M-F 7:30AM - 4:00PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason D. Cardone can be reached on 571/272-3933. The fax phone numbers for the organization where

Art Unit: 2445

this application or proceeding is assigned are 571/273-8300 for regular communications  
and 571/273-8300 for After Final communications.

/Thomas Duong/

Patent Examiner, Art Unit 2445

*December 10, 2008*

/Patrice Winder/

Primary Examiner, Art Unit 2445